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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,793	02/27/2001	Hiromasa Miyaji	766.46	3687

5514 7590 10/31/2008

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30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
SHAFER, SHULAMITH H	

ART UNIT	PAPER NUMBER
1647	

MAIL DATE	DELIVERY MODE
10/31/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/763,793	MIYAJI ET AL.	
	Examiner	Art Unit	
	SHULAMITH H. SHAFER	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 46-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 46-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/1/08, 9/2/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Status of Application, Amendments, And/Or Claims:

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1 August 2008 has been entered.

Claims 1-12 and 46-48 are pending in the instant application and are under consideration. These are the same claims that were submitted on 27 March 2008 and entered as an after final amendment.

Information Disclosure Statement:

The Information Disclosure statements (IDS) submitted on the 1 August 2008 and 2 September 2008 have been considered. The signed copies are attached.

Priority:

Acknowledgment is made of applicants' claim for foreign priority based on an application filed in Japan on 27 of August 1998. A certified copy of the Japan 10/241248 application as required by 35 U.S.C. 119(b). Applicants have provided a certified translation of 10/241248 with submission of 1 August 2008; therefore, Applicants have perfected priority claim to 27 August 1998, the date of filing of Japan 10/241248.

Withdrawn Objections/Rejections

35 U.S.C. § 112, First Paragraph:

The rejection of claims 2, 5, 6, 8-12, 29, 42, 46 and 48 under 35 U.S.C. 112, first paragraph (scope of enablement), is withdrawn in view of applicants amendments to the claims.

The rejection of Claims 2, 5, 6, 8-12, 29, 42, 46 and 47 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn in view of applicants' amendment to the claims.

Maintained Rejections

35 U.S.C. §§ 101 and 112, First Paragraph:

35 U.S.C. § 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The rejection of Claim(s) 1-12 and 46-48 under 35 U.S.C. 101 because the claimed invention is not supported by either a credible, substantial or specific asserted utility or a well established utility is maintained for reasons of record and reasons set forth below.

Applicants traverse the rejection (After final submission of 27 March 2008 and Remarks of 1 August 2008).

The reasons for the traversal are:

a. the polypeptide of SEQ ID NO:1 is a member of the nucleoside transporter system. Dipyridamole, a compound known to inhibit the uptake of adenosine, enhances bronchospasm in an asthmatic patient (Crimi et al. 1988 Allergy 43:179-83, submitted with after-final amendment). Thus, one would conclude that bronchospasm is suppressed by accelerating uptake of adenosine; therefore, when a DNA encoding SEQ ID NO:1 is expressed in the lung of asthmatic patients, bronchospasm in the patient is treated (submission of 27 March 2008, page 7, last paragraph, bridging page 8, 1st paragraph).

b. dipyridamole, as an inhibitor of equilibrative nucleoside transporters, including the one described in the instant invention, inhibits the decrease of extracellular adenosine concentration by inhibiting uptake of adenosine. The transporters take in and eliminate extracellular adenosine. Thus, when transporters are inhibited, more adenosine is available in the extracellular space to activate the adenosine receptor on the cell membrane and cause bronchoconstriction (Remarks of 1 August 2008, page 2, numbered paragraphs 1-3).

c. References provided with applicants submission provide evidence that concentration of adenosine is elevated in the lung of asthmatic and adenosine-induced bronchoconstriction is mediated by A(1) receptor on the cell membrane.

Response to Arguments

Applicant's arguments have been fully considered but are not found to be persuasive for the following reasons:

Applicants have sought to establish the following fact pattern:

1. Adenosine, present in elevated levels in the lungs of asthmatic patients, binds to the A(1) receptor, and elicits bronchoconstriction (Hua et al. 2007. American Journal of Physiology-Lung, Cellular and Molecular Physiology. 293:L25-32 and Brown et al. 2008. Eur. Resp J. 31:311-9, abstracts of both references submitted on 1 August 2008).

2. Nucleoside transporters, including the polypeptide of the instant invention, transport adenosine into the cell, thereby reducing the amount of adenosine available to

activate the A(1) receptor; thus these polypeptides play a role in reducing bronchospasms.

3. Therefore, the polypeptide of the instant invention and its encoding DNA would be useful in treating bronchospasm in the asthmatic patient.

In summary, Applicants assert, in above arguments (a, b, 2 and 3 above), that the polypeptide of the instant invention and DNA encoding said polypeptide have utility in treating bronchospasm in an asthmatic patient , for which there is no support in the specification of the instant invention.

Applicants are reminded that a specific or substantial asserted utility or a well established utility must be presented at the time of filing. The specification has not asserted a specific and substantial utility nor is there a well established utility for the claimed invention because the specification and/or the art fail to establish a connection between the polypeptide of SEQ ID NO:1 structure, expression or activity or changes in structure, expression or activity and any specific disease state nor has this been established for the encoding DNA (SEQ ID NO:2). Applicants assert, in the specification, that the polypeptide of the instant invention may be used as "a preventive agent or a therapeutic agent for ischemic heart disease, cerebral disorder at the time of stroke, immune response accompanied by organ transplantation, malignant tumor, nephritis, pancreatitis or hypertension….Its applications as an analgesic, an antiplatelet agent, an agent for increasing activity of an antiviral agent or a malignant tumor treating agent and an agent for reducing side effects at the time of chemotherapy can also be expected" (page 63, last paragraph, bridging page 64, 1st paragraph). There is no assertion that the polypeptide of the instant invention (or its encoding DNA) may be used to treat symptoms in the asthmatic patient.; thus there is no support in the specification for this utility.

In response to a: Applicants argue, without supporting evidence, that when a DNA encoding SEQ ID NO:1 is expressed in the lung of asthmatic patients, bronchospasm in the patient is treated by gene therapy. The specification does not

contemplate any gene therapy methods or protocols and does not support this assertion of utility.

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In response to b: One of skill in the art would be unable to predict that nucleoside transporters, such as the polypeptide of the instant invention would have a therapeutic role in treatment of asthma and related bronchospasms. The fact that dipyridamole, an inhibitor of equilibrative nucleoside transporters, enhances bronchospasm in an asthmatic patient does not provide evidence that stimulating nucleoside transporters or increasing the level of nucleoside transporter protein in the cell would inhibit bronchospasms. Contrary to applicants' assertion above, the art teaches that equilibrative transporters can move adenosine bidirectionally across plasma membranes by facilitated diffusion. Adenosine formed intracellularly can be released by bidirectional nucleoside transport processes to activate cell surface receptors (Borgland et al. 1998, Europ. J of Pharm. 346:339-344, abstract and page 339, 2nd column, 1st paragraph). Thus, the presence of additional nucleoside transporter polypeptides on the surface of bronchial cells might stimulate bronchospasms, by transporting adenosine to the extracellular spaces.

Further research would be required to ascertain the function of SEQ ID NO:1, and to identify a disease with which this polypeptide is associated. Thus, the instant application is an invitation to the skilled artisan to experiment as to the function of the polypeptide of the instant invention and to determine if there is any nexus between said polypeptide any disease or pathological condition.

Utility must be in readily available form. In Brenner v. Manson, 148 U.S.P.Q. 689 (Sup. Ct,.1966), a process of producing a novel compound that was structurally analogous to other compounds which were known to possess anti-cancer activity was alleged to be useful because the compound produced thereby was potentially useful as an anti-tumor agent in the absence of evidence supporting this utility. The court expressed the opinion that all chemical compounds are “useful” to the chemical arts when this term is given its broadest interpretation. However, the court held that this

broad interpretation was not the intended definition of "useful" as it appears in 35 U.S.C. § 101, which requires that an invention must have either an immediately obvious or fully disclosed "real world" utility. The instant claims are drawn to a polynucleotide encoding a protein which has undetermined function or biological significance. Until some actual and specific activity can be attributed to the protein identified in the specification as SEQ ID NO:1 or the polynucleotides encoding it (SEQ ID NO:2) the claimed invention is incomplete.

Since the polypeptide of SEQ ID NO:1, or its encoding nucleic acid molecule (SEQ ID NO:2) are not supported by a specific and substantial utility, or a well-established utility, then expression vectors, and transformants comprising the nucleic acids also do not possess utility.

The rejections of Claims 1-12, and 46-48 under 35 U.S.C. 112, first paragraph are maintained for reasons of record. Specifically, since the claimed invention is not supported by either a specific or substantial asserted utility or a well established utility for the reasons of record and those set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Art made of record:

The following art is made of record and not relied upon is considered pertinent to applicant's disclosure. Baker et al. (WO 200012708) teach a polynucleotide (SEQ ID NO:78), encoding a PRO 1380 polypeptide, which has 99.2% identity to SEQ ID NO:2 of the instant invention (See alignment below). However, the reference claims priority to provisional filed 3 November 1998, which is after the perfected priority date of the instant application (27 August 1998)

```
Human PRO1380 (UNQ717) cDNA sequence SEQ ID NO:78.
WO200012708-A2.
09-MAR-2000.
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Baker K, Goddard A, Gurney AL, Smith V, Watanabe CK, Wood WI;
Sequence 2243 BP; 463 A; 701 C; 572 G; 507 T; 0 U; 0 Other;

Query Match 99.2%; Score 2223; DB 3; Length 2243;
Best Local Similarity 99.8%; Pred. No. 0;
Matches 2226; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

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Qy          1 CGGCGGCGTGGCGCAGCGGCGACATGGCCGTTGTCTCAGAGGACGACTTTCAGCACAGTT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         13 CGGCGGCGTGGCGCAGCGGCGACATGGCCGTTGTCTCAGAGGACGACTTTCAGCACAGTT 72

Qy         61 CAAACTCCACCTACGGAACCACAAGCAGCAGTCTCCGAGCTGACCAGGAGGCACTGCTTG 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         73 CAAACTCCACCTACGGAACCACAAGCAGCAGTCTCCGAGCTGACCAGGAGGCACTGCTTG 132

Qy        121 AGAAGCTGCTGGACCGCCCGCCCCCTGGCCTGCAGAGGCCCGAGGACCGCTTCTGTGGCA 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        133 AGAAGCTGCTGGACCGCCCGCCCCCTGGCCTGCAGAGGCCCGAGGACCGCTTCTGTGGCA 192

Qy        181 CATACATCATCTTCTTCAGCCTGGGCATTGGCAGTCTACTGCCATGGAACTTCTTTATCA 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        193 CATACATCATCTTCTTCAGCCTGGGCATTGGCAGTCTACTGCCATGGAACTTCTTTATCA 252

Qy        241 CTGCCAAGGAGTACTGGATGTTCAAACTCCGCAACTCCTCCAGCCCAGCCACCGGGGAGG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        253 CTGCCAAGGAGTACTGGATGTTCAAACTCCGCAACTCCTCCAGCCCAGCCACCGGGGAGG 312

Qy        301 ACCCTGAGGGCTCAGACATCCTGAACTACTTTGAGAGCTACCTTGCCGTTGCCTCCACCG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        313 ACCCTGAGGGCTCAGACATCCTGAACTACTTTGAGAGCTACCTTGCCGTTGCCTCCACCG 372

Qy        361 TGCCCTCCATGCTGTGCCTGGTGGCCAACTTCCTGCTTGTCAACAGGGTTGCAGTCCACA 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        373 TGCCCTCCATGCTGTGCCTGGTGGCCAACTTCCTGCTTGTCAACAGGGTTGCAGTCCACA 432

Qy        421 TCCGTGTCCTGGCCTCACTGACGGTCATCCTGGCCATCTTCATGGTGATAACTGCACTGG 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        433 TCCGTGTCCTGGCCTCACTGACGGTCATCCTGGCCATCTTCATGGTGATAACTGCACTGG 492

Qy        481 TGAAGGTGGACACTTTCTCCTGGACCCGTGGCTTTTTTGCGGTCACCATTGTCTGCATGG 540
              |||||||||||||| |||||||||||||| |||||||||||||||||||||||||||||
Db        493 TGAAGGTGGACACTTCCTCCTGGACCCGTGGTTTTTTTGCGGTCACCATTGTCTGCATGG 552

Qy        541 TGATCCTCAGCGGTGCCTCCACTGTCTTCAGCAGCAGCATCTACGGCATGACCGGCTCCT 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        553 TGATCCTCAGCGGTGCCTCCACTGTCTTCAGCAGCAGCATCTACGGCATGACCGGCTCCT 612

Qy        601 TTCCTATGAGGAACTCCCAGGCACTGATATCAGGAGGAGCCATGGGCGGGACGGTCAGCG 660
              |||||||||||||||||| |||||||||||||||||||||||||||||||||||||||||
Db        613 TTCCTATGAGGAACTCCCAAGCACTGATATCAGGAGGAGCCATGGGCGGGACGGTCAGCG 672

Qy        661 CCGTGGCCTCATTGGTGGACTTGGCTGCATCCAGTGATGTGAGGAACAGCGCCCTGGCCT 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        673 CCGTGGCCTCATTGGTGGACTTGGCTGCATCCAGTGATGTGAGGAACAGCGCCCTGGCCT 732

Qy        721 TCTTCCTGACGGCCACCATCTTCCTCGTGCTCTGCATGGGACTCTACCTGCTGCTGTCCA 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        733 TCTTCCTGACGGCCACCATCTTCCTCGTGCTCTGCATGGGACTCTACCTGCTGCTGTCCA 792

Qy        781 GGCTGGAGTATGCCAGGTACTACATGAGGCCTGTTCTTGCGGCCCATGTGTTTTCTGGTG 840
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Db        793 GGCTGGAGTATGCCAGGTACTACATGAGGCCTGTTCTTGCGGCCCATGTGTTTTCTGGTG 852

Qy        841 AAGAGGAGCTTCCCCAGGACTCCCTCAGTGCCCCTTCGGTGGCCTCCAGATTCATTGATT 900
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        853 AAGAGGAGCTTCCCCAGGACTCCCTCAGTGCCCCTTCGGTGGCCTCCAGATTCATTGATT 912

Qy        901 CCCACACACCCCCTCTCCGCCCCATCCTGAAGAAGACGGCCAGCCTGGGCTTCTGTGTCA 960
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        913 CCCACACACCCCCTCTCCGCCCCATCCTGAAGAAGACGGCCAGCCTGGGCTTCTGTGTCA 972

Qy        961 CCTACGTCTTCTTCATCACCAGCCTCATCTACCCCGCCGTCTGCACCAACATCGAGTCCC 1020
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        973 CCTACGTCTTCTTCATCACCAGCCTCATCTACCCCGCCGTCTGCACCAACATCGAGTCCC 1032

Qy       1021 TCAACAAGGGCTCGGGCTCACTGTGGACCACCAAGTTTTTCATCCCCCTCACTACCTTCC 1080
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1033 TCAACAAGGGCTCGGGCTCACTGTGGACCACCAAGTTTTTCATCCCCCTCACTACCTTCC 1092

Qy       1081 TCCTGTACAACTTTGCTGACCTATGTGGCCGGCAGCTCACCGCCTGGATCCAGGTGCCAG 1140
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1093 TCCTGTACAACTTTGCTGACCTATGTGGCCGGCAGCTCACCGCCTGGATCCAGGTGCCAG 1152

Qy       1141 GGCCCAATAGCAAGGCGCTCCCAGGGTTCGTGCTCCTCCGGACCTGCCTCATCCCCCTCT 1200
            ||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1153 GGCCCAACAGCAAGGCGCTCCCAGGGTTCGTGCTCCTCCGGACCTGCCTCATCCCCCTCT 1212

Qy       1201 TCGTGCTCTGTAACTACCAGCCCCGCGTCCACCTGAAGACTGTGGTCTTCCAGTCCGATG 1260
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1213 TCGTGCTCTGTAACTACCAGCCCCGCGTCCACCTGAAGACTGTGGTCTTCCAGTCCGATG 1272

Qy       1261 TGTACCCCGCACTCCTCAGCTCCCTGCTGGGGCTCAGCAACGGCTACCTCAGCACCCTGG 1320
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1273 TGTACCCCGCACTCCTCAGCTCCCTGCTGGGGCTCAGCAACGGCTACCTCAGCACCCTGG 1332

Qy       1321 CCCTCCTCTACGGGCCTAAGATTGTGCCCAGGGAGCTGGCTGAGGCCACGGGAGTGGTGA 1380
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1333 CCCTCCTCTACGGGCCTAAGATTGTGCCCAGGGAGCTGGCTGAGGCCACGGGAGTGGTGA 1392

Qy       1381 TGTCCTTTTATGTGTGCTTGGGCTTAACACTGGGCTCAGCCTGCTCTACCCTCCTGGTGC 1440
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1393 TGTCCTTTTATGTGTGCTTGGGCTTAACACTGGGCTCAGCCTGCTCTACCCTCCTGGTGC 1452

Qy       1441 ACCTCATCTAGAAGGGAGGACACAAGGACATTGGTGCTTCAGAGCCTTTGAAGATGAGAA 1500
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1453 ACCTCATCTAGAAGGGAGGACACAAGGACATTGGTGCTTCAGAGCCTTTGAAGATGAGAA 1512

Qy       1501 GAGAGTGCAGGAGGGCTGGGGGCCATGGAGGAAAGGCCTAAAGTTTCACTTGGGGACAGA 1560
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1513 GAGAGTGCAGGAGGGCTGGGGGCCATGGAGGAAAGGCCTAAAGTTTCACTTGGGGACAGA 1572

Qy       1561 GAGCAGAGCACACTCGGGCCTCATCCCTCCCAAGATGCCAGTGAGCCACGTCCATGCCCA 1620
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1573 GAGCAGAGCACACTCGGGCCTCATCCCTCCCAAGATGCCAGTGAGCCACGTCCATGCCCA 1632

Qy       1621 TTCCGTGCAAGGCAGATATTCCAGTCATATTAACAGAACACTCCTGAGACAGTTGAAGAA 1680
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1633 TTCCGTGCAAGGCAGATATTCCAGTCATATTAACAGAACACTCCTGAGACAGTTGAAGAA 1692

Qy       1681 GAAATAGCACAAATCAGGGGTACTCCCTTCACAGCTGATGGTTAACATTCCACCTTCTTT 1740
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Db       1693 GAAATAGCACAAATCAGGGGTACTCCCTTCACAGCTGATGGTTAACATTCCACCTTCTTT 1752

Qy       1741 CTAGCCCTTCAAAGATGCTGCCAGTGTTCGCCCTAGAGTTATTACAAAGCCAGTGCCAAA 1800
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1753 CTAGCCCTTCAAAGATGCTGCCAGTGTTCGCCCTAGAGTTATTACAAAGCCAGTGCCAAA 1812

Qy       1801 ACCCAGCCATGGGCTCTTTGCAACCTCCCAGCTGCGCTCATTCCAGCTGACAGCGAGATG 1860
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1813 ACCCAGCCATGGGCTCTTTGCAACCTCCCAGCTGCGCTCATTCCAGCTGACAGCGAGATG 1872

Qy       1861 CAAGCAAATGCTCAGCTCTCCTTACCCTGAAGGGGTCTCCCTGGAATGGAAGTCCCCTGG 1920
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1873 CAAGCAAATGCTCAGCTCTCCTTACCCTGAAGGGGTCTCCCTGGAATGGAAGTCCCCTGG 1932

Qy       1921 CATGGTCAGTCCTCAGGCCCAAGACTCAAGTGTGCACAGACCCCTGTGTTCTGTGGGTGA 1980
                ||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db       1933 CATGGTCAGTCCTCAGGCCCAAGACTCAAGTGTGCACAGACCCCTGTGTTCTGCGGGTGA 1992

Qy       1981 ACAACTGCCCACTAACCAGACTGGAAAACCCAGAAAGATGGGCCTTCCATGAATGCTTCA 2040
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1993 ACAACTGCCCACTAACCAGACTGGAAAACCCAGAAAGATGGGCCTTCCATGAATGCTTCA 2052

Qy       2041 TTCCAGAGGGACCAGAGGGCCTCCCTGTGCAAGGGATCAAGCATGTCTGGCCTGGGTTTT 2100
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2053 TTCCAGAGGGACCAGAGGGCCTCCCTGTGCAAGGGATCAAGCATGTCTGGCCTGGGTTTT 2112

Qy       2101 CAAAAAAAGAGGGATCCTCATGACCTGGTGGTCTATGGCCTGGGTCAAGATGAGGGTCTT 2160
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2113 CAAAAAAAGAGGGATCCTCATGACCTGGTGGTCTATGGCCTGGGTCAAGATGAGGGTCTT 2172

Qy       2161 TCAGTGTTCCTGTTTACAACATGTCAAAGCCATTGGTTCAAGGGCGTAATAAATACTTGC 2220
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2173 TCAGTGTTCCTGTTTACAACATGTCAAAGCCATTGGTTCAAGGGCGTAATAAATACTTGC 2232

Qy       2221 GTATTCAAAAA 2231
                ||||||||||
Db       2233 GTATTCAAAAA 2243
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Conclusion:

No claims are allowed.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued

examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Deleted: ¶

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHULAMITH H. SHAFER whose telephone number is (571)272-3332. The examiner can normally be reached on Monday through Friday, 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath Rao, Ph.D. can be reached on 571-272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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